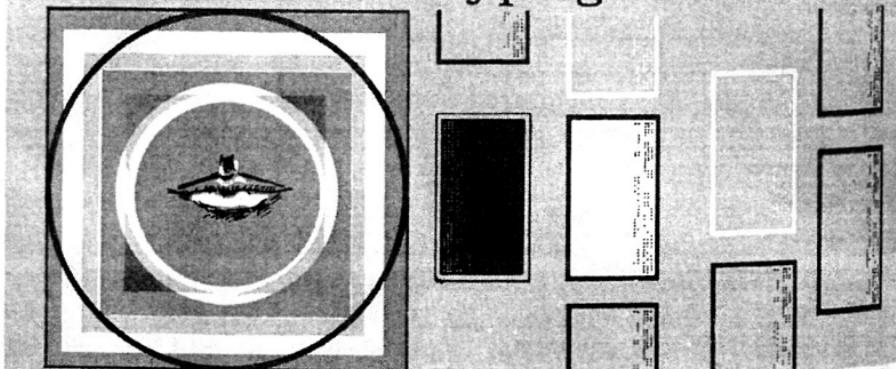


Edge-Punched Cards—

The Input Unit for Automatic Typing



by BERNARD STERNIN
of the Brooklyn, New York Bar

THE edge-punched card is an item destined to have a momentous impact on the operation of a law office, since it is the basic unit used in the automation of law-office typing.

For the firm that has decided to purchase one of the automatic typewriters that are operated by punched cards and tape, edge-punched cards produce a seemingly endless array of law-office typing jobs. This article will describe a number of these uses, so that you may judge for yourself their applicability to your practice.

It will also point out some of the advantages to using edge-punched cards in your automatic typing system as compared to other methods—such as magnetic tape.

DESCRIPTION OF CARDS

An edge-punched card measures three by seven inches. Along one of its long edges, it is punched with holes, which cover a width of one inch. The unpunched area of two by seven inches remains blank and is available for labeling or writing.

The punched holes are codes that represent letters, numerals, and the

EDITOR'S NOTE: This is the third in a series of recent articles by Mr. Sternin on the applications of automatic typing in the modern law firm. The previous articles in THE PRACTICAL LAWYER were: *How To Automate Law Office Typing—A Step-by-Step Approach*—May 1968, p. 69; and *Programmed Letterwriting for a Personal Injury Practice*—Dec. 1968, p. 45.

various typewriter functions, such as spacing, tabulating, and shifting cases. When the cards are fed into an automatic typewriter, they cause the machine to type the material encoded in them. Thus, the cards automatically control all the aspects of typing.

Unpunched cards are obtained from the machine's manufacturer in packages of 500. They come attached together at their three-inch side, in an accordion or fan fold. A stack of such cards is shown being fed into a typewriter in Illustration 1, on the following page.

The purpose of this arrangement is to allow the user to create units of several cards attached together, which will fold and store as a three-by seven-inch unit and which will provide a single punched unit of as long a length as is needed.

Storage Capacity

Each edge-punched card is capable of storing about one standard line of type, which is usually between six to seven inches long. Consequently, encoding a paragraph of four and a half lines will require punching along the length of about four and a half cards.

However, no card is ever cut in half. Instead, the complete five-card unit would be detached from the remaining unused pack at the end of the fifth card. The paragraph will have been punched along the seven-inch edge of a series of five cards, which will remain attached

together at their three-inch edge.

To store the unit, the five cards are accordion folded into the overall three- by seven-inch size in which they were initially furnished. To use the unit, the five cards are unfolded and passed through the automatic typewriter, which reads the edge-punched holes in sequence.

Punching and Labeling

Edge-punched cards are created by the same automatic typewriter that they will later operate, so you do not need any additional equipment to punch them. The cards are punched by your own staff, and nothing needs to be sent out of the office.

Automatic typewriters come equipped with a punching device attached on the side of the machine. When this punch is turned on by the operator, everything typed on the typewriter will be recorded by making configurations of holes along the edge of the cards. This process is shown in Illustration 1.

There is nothing special that the operator has to do; she simply types in the ordinary way. She could do her typing onto mere scrap paper, if she desired. More likely, she will be typing instead onto labeling material, which she will affix onto the card after she has finished punching it.

LABELS

The blank area above the punched edge is available for labeling or for

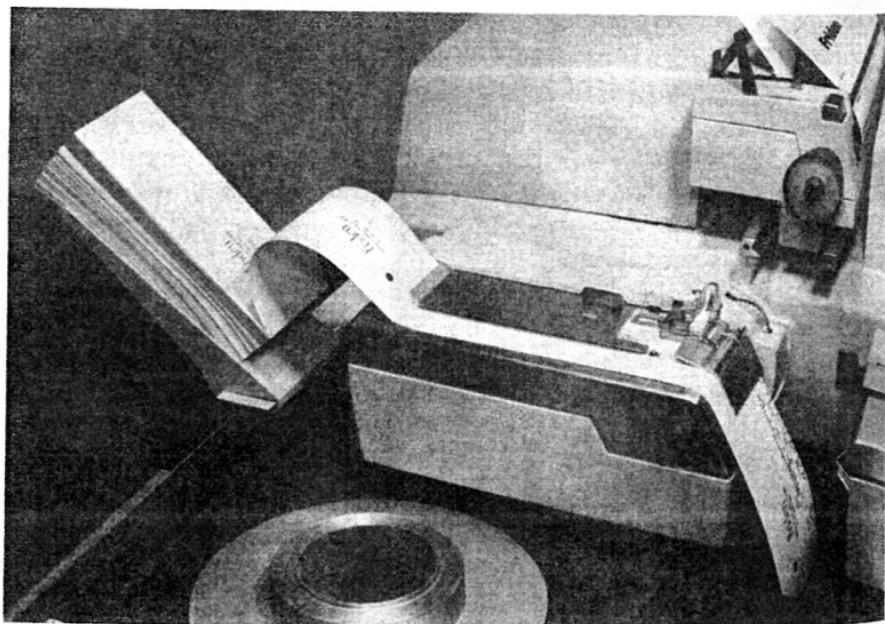


ILLUSTRATION 1: A chain of cards being punched by an automatic typewriter. The punching is done under the plastic dome at right. The small wheel near it enables the operator to turn cards back, if the correction of an error is needed.

otherwise indicating the card's contents. Although this area is two by seven inches, any labels that are used should be somewhat smaller to avoid the risk of coming too close to the punched holes or affixing the label beyond the edge of the card.

The label of the contents of the cards is generally typed simultaneously with the punching of the card or cards to which the label will be affixed. The label is usually single spaced, even when you are punching the cards to double space.

A single-spaced label will accommodate six typed lines to the inch. If you use labels one and a half inches from top to bottom, you can accommodate nine lines, which will

take in almost anything you will want to punch into any one unit of cards. If the label runs longer, it will simply have to be affixed in part to the second card, which is a matter of little importance.

The label is affixed to the topmost three- by seven-inch card, and the unit is then accordion folded as previously described. You now have a unit of uniform three- by seven-inch size whose face is labeled with its contents. There is never any difficulty in knowing what the unit is and exactly what it will type.

How Cards Function

Automatic typewriters are able to sense the configuration of holes

along the edge of the punched cards, and they respond by automatically typing the material that the holes represent. This function is called "reading" the card.

The operator's job is to place stationery or legal cap into the typewriter roller, as she would with a conventional machine, and then to place the cards into the machine in

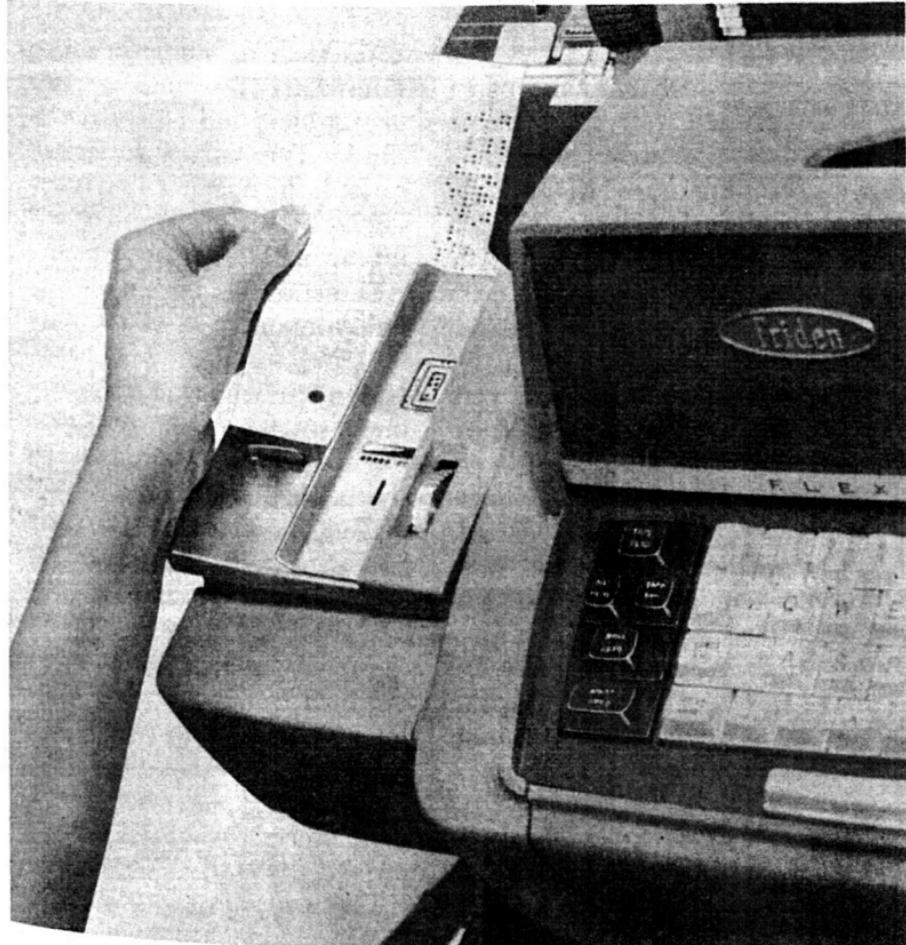
the required sequence. Insertion of a card into the reader is shown in Illustration 2.

She will press a switch marked "Start Read," and the machine will then do the typing automatically.

MANUAL ENTRIES

Sometimes the operator will need to make manual additions to the

ILLUSTRATION 2: A separate edge-punched card being placed into the reader of an automatic typewriter.



material being typed automatically. For example, a name or a date may have to be inserted at some point onto the paper that is being typed. To provide for manual entries, the edge-punched card is previously coded with a "stop" code.

When the machine is reading the card, it will respond to that code by stopping the automatic reading action, and hence the typing action. The operator then makes the necessary addition by typing it on the machine's keyboard, in the routine manner.

The typing done onto the paper in the machine's roller is identical, irrespective of whether the keys function automatically in response to punched cards or manually in response to keyboard typing. The final product does not appear as a form with blanks filled in. Instead, it is an individually typed letter or document, appearing in every way identical to one resulting from conventional, manual typing.

VARYING THE AUTOMATED MATERIAL

There will be instances when only some paragraphs of a particular piece of work have been prepunched. In those situations, the operator will have to supplement the punched materials with extensive manual typing on the machine's keyboard.

To whatever extent punched cards exist, they are used. When not in existence, typing is done conventionally, on the same machine.

There is an interplay between manual and automatic typing; one supplements the other with complete flexibility.

Edge-punched cards can be coded to skip alternative words. If the language of a paragraph calls for "his" or "hers," both words may be punched into the card. With appropriate coding, the operator may have the card read out either word, skipping the other, as the situation requires.

The same practice applies to alternatives such as administrator or administratrix, executor or executrix, to singulars and plurals, and many similar alternatives. In these applications, the operator's job is to make the appropriate selection by depressing a "Read" key or a "Skip" key.

Sometimes, edge-punched cards will contain most of the language required for the job at hand, but will need some modification. In these situations, the operator may use as much of a particular card as she is able, and then stop the card reader by pressing a "Stop Read" key. She may then choose to remove the card entirely, and proceed to finish the paragraph manually, or she may be able to utilize more of the card by skipping a few of the prepunched words or lines. She either can cause the machine to do this automatically, or she can manually move the card past the unwanted material.

The code that separates words and the code that separates lines are

easy to see. This ability to visualize what is on an edge-punched card is a distinct advantage over magnetic tape, which, of course, contains no markings that the eye can detect.

The operator always has complete freedom to stop the automatic typewriter at any point, simply by pressing the "Stop Read" key. She may begin automatic typing again by pressing the "Start Read" key. The work in the machine's roller is in no way affected, other than to be stopped and started again.

ADVANTAGES

Automatic Typing in General

The advantages of developing approaches to typing that utilize automatic equipment are many.

- **Speed.** An automatic typewriter types at about 160 words a minute, without let-up.

- **Error-free work.** An automatic typewriter makes no typing mistakes. When punching cards initially, there is a way of correcting any mispunches. Once done, the cards are permanently error-free.

- **Reduction of proofreading time.** Proofreading is reduced to checking to be sure the correct card was used. If the first few words of the paragraph are recognized as correct, the balance need not be read at all, except for manual additions.

- **Programmability of format.** The particular format in which work is to lay out, such as in a court order, is encoded into the tabular and spacing codes of the cards. Consequently, less experienced help can get work done.

- **Reliability of data.** Names, addresses, index and calendar numbers, descriptions, spelling—all are reliably correct every time the card is used.

Edge-Punched Cards in Particular

Automatic typewriters available for law offices presently use three media for recording material—magnetic tape, punched paper tape, and edge-punched cards. Edge-punched cards have unique advantages as a method of operating an automatic typewriter:

- **Random access.** Cards may be fed into the automatic typewriter in any order. No particular sequence is required, and any card can be discarded and replaced by a new one without affecting others.

- **Unlimited programming.** There is no limit to the number of cards that can be developed.

- **Identifiability.** By reading the label affixed to the card or to the uppermost of an attached series of cards anyone knows exactly what the card or series contains.

- *Code readability.* The operator can visually locate where each letter, word, sentence, and paragraph begins and ends. At times, this can be extremely helpful.

- *Markability.* Edge-punched cards can be written on. Notations can be made directly on them indicating collateral information and instructions pertinent to their operation.

- *Self-indexing.* Each edge-punched card may be marked and identified on its upper left corner or across its upper edge. No separate listing needs to be consulted to find and use them.

- *Low cost.* About one cent each.

- *Versatile storage.* Edge-punched cards may be filed in drawers, inserted in overlapping pockets in cardholder pages, stapled onto carbon copies of letters, dropped into related files, and handled in the same way as any index card.

- *Tape compatibility.* Equipment capable of punching and reading edge-punched cards will also be able to punch and read paper tape. When desired, the contents of several cards can be transferred automatically to a single paper tape, as shown in Illustration 3.

- *Flexibility of staff.* Anyone can insert cards into the machine. Dur-

ing periods when the regular operator is away, others can fill in with little special training.

Comparison with Magnetic Tape

In addition to the diversity of jobs in which edge-punched cards may be used, there is a great advantage in the fact that the operator of the machine need never be hesitant or in doubt about what is going to happen. At all times she is able to see exactly what language she is going to get from the machine reader, how long it is, how wide it is, and exactly what it will say.

Assume for a moment that she is working with magnetic tape and needs to run the caption on a form. Where on the form should she begin? Is the caption long or short?

Will she start too high and end with a bizarre amount of space between the caption and the printing? Or will she start too low and find the machine still typing defendants' names over the printed material?

At the form's close, she will need to run in the name, representation, and address of the defendants' attorneys. With a magnetic tape system, she would have to refer to a "log," which might tell her, for example, that a certain reel of magnetic tape has that material at "Location Six."

She knows that she can reach it by pressing the appropriate "search" key. But how many names will be at that location? How wide will the typing run? Can she place a

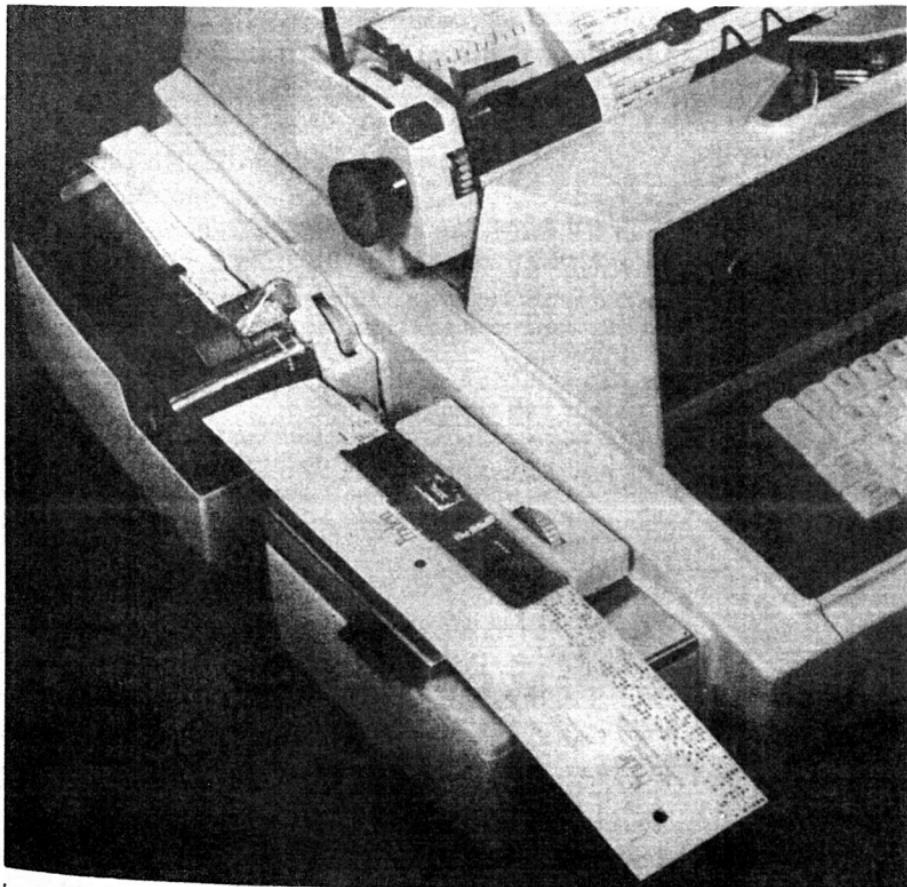


ILLUSTRATION 3: Here the reader is reading a chain of edge-punched cards, while the punch is simultaneously transferring their contents onto a paper tape.

second appearance alongside of the first, or will part of it run too far to the right?

These are important considerations for an operator. By using labeled, edge-punched cards, she can see what she is doing and is not required to work in the dark. She does not have to become familiar with a special coding system to search a magnetic tape or know the sequence or manner in which en-

tries are held in storage.

The operator is therefore at ease with the cards, as well as with the machine itself.

THE BASIC SYSTEM

Edge-punched cards have value in a variety of law-office functions—from the weekly payroll to the preparation of pleadings. In order to describe some of these diverse applications, this article will first view

the basic automatic typing system as set up in a hypothetical modern law office.

The Machine

The machine involved is a typical automatic typewriter, such as the Friden "Flexowriter" or the Dura "Mach," equipped with a card reader and punch.

An operator, who is a typist, has been assigned to it as her full-time job. She will use the machine to produce various typing required by other members of the office.

USE BY OFFICE PERSONNEL

The machine has been in this hypothetical office now for several years, and the office staff has had time to develop various systems of edge-punched cards according to the experience and needs of each. It is important to realize that the machine serves many users, each of whom brings to it his own series of edge-punched cards capable of doing his particular job of the moment. It is somewhat like a computer, to which each user brings his own "program" of cards to have run.

Each person's system and his cards exist quite independently of the machine and may be stored, studied, reviewed, and referred to at other work stations in the office—and out of the office as well. Each staff member is in the best position to know his own needs. A system that he himself develops will probably be

of more use to him than a system imposed on him by someone else.

The person who seeks to have his work done has elected to develop a punched card approach because he realizes the tremendous savings in time, ease of "dictation," and assurance of accuracy. That individual controls his own cards. He is free to add, modify, or discard any of them. The machine operator's responsibility is simply to run his cards, execute the associated instructions, and supplement with manual typing where required.

Storage of Cards

RANDOM USE

Because each edge-punched card is an individual unit, like an index card, each can be stored and used on its own, independently of all other cards. This factor underlies the cards' versatility.

If, instead of cards, you tried to store your materials on rolls of tape, you would lose that versatility. The operator would have to search forwards and backwards throughout the roll of tape, or throughout several rolls, to find the phrase or paragraph she needed.

That approach might work well with long units, and with units recorded in a sequence. But for short units and for items that must be read in random order, individual unit cards will do the job whereas a long tape will not.

CONVENIENT LOCATION

The second factor that makes cards so versatile is the flexibility of storage. Cards that do different jobs can be stored in different ways and in different places.

The operator wants certain, routinely used cards immediately available at her desk. These include the date card, the cards containing the firm's name as used to close letters and legal papers, and the names of office personnel. She may want these in a wall rack, similar to that used for time cards at a time clock.

In that way she can reach for any card needed, drop it into the machine, use it, then drop it back into the rack. She certainly is not going to affix and search a roll of tape each of the many times a day she needs those items.

Cards that contain phraseology that supplements the body of a printed form belong in the folder in which the forms are stored.

Cards that type the data of the various cases must be grouped together by the case to which they relate and stored either in the case file or in a cardholder page of a looseleaf ring book, indexed by cases.

If a document being drafted has been punched into cards, they should be stored with a copy of the draft to which they relate.

Different applications require different storage methods and locations. The right storage for each job is often critical to success or failure. Edge-punched cards may

be stored in different ways and at different locations, as best suits the particular application for which they are being used.

CARDHOLDER PAGES

One of the most convenient ways to store edge-punched cards is in specially designed cardholder pages. These are made of stiff cardboard and consist of overlapping flaps into which the cards or folded groups of cards are inserted. Because of the overlapping, the label of each card can be read at a glance, as shown in Illustration 4, on the following page.

The cardholder pages are kept in standard three-hole, looseleaf ring binders. One of the advantages of this system is its flexibility. It is internally expandable, since new pages can be added at any point.

APPLICATIONS OF CARDS IN A LAW OFFICE

The three basic areas of law office typing in which edge-punched cards have valuable applications are:

- Storing case data. Cards can be used to store names, addresses, and captions. This data can be punched and labeled as an initial step, or it can be "captured" as a byproduct of the first typing of the data onto an actual letter or legal paper.
- Programming legal materials (such as pleadings, affidavits, and bills of particulars).

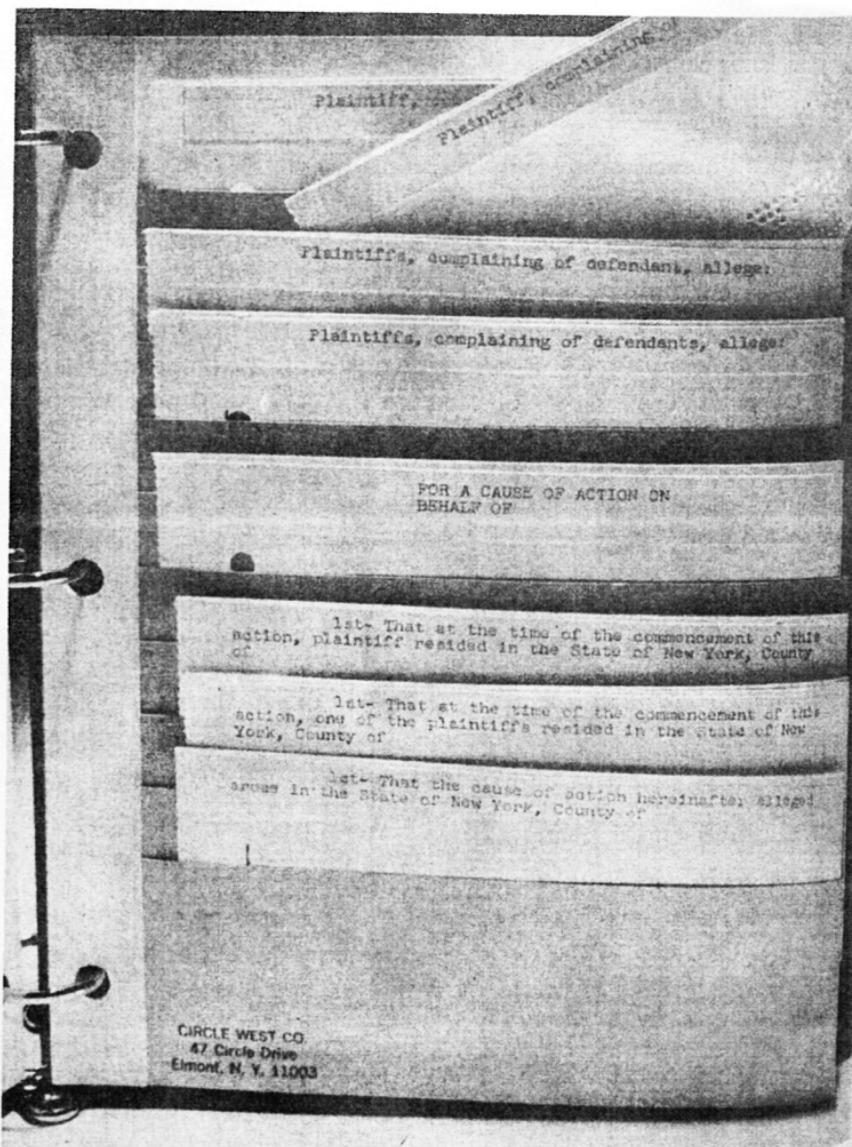


ILLUSTRATION 4: Edge-punched cards being stored in a cardholder page in looseleaf ring binder. The labels are readily visible on the cards contained in the flaps. Each cardholder page can store 10 cards in an overlapping manner and standard tab dividers can be used to separate groups of pages into sections within the binder. Any number of pages or looseleaf books may be added which makes the storage method extremely flexible. These cards form the beginning of a complaint in a civil action.

• Programming letterwriting.

The basic approach to these areas was set forth in the two previous articles (mentioned in the Editor's Note at the outset of this article) and need not be repeated here. However, it would be appropriate to mention the following applications of edge-punched cards in the law office.

Benefits of Programmed Documents

MULTIPARAGRAPHS APPROACHES

When materials are programmed into interchangeable paragraphs that cover numerous situations, edge-punched cards often make it possible for the operator to produce an entire letter or document with virtually no manual typing.

Multiparagraphed approaches are possible in many legal applications. Even if local practice does permit the use of a printed form, there are many applications in which each of several paragraphs has several variations.

To print all possible combinations of paragraphs would be an unworkable approach. However, punching each paragraph into an edge-punched card series is an ideal solution. The paragraphs can be combined in any manner needed, and new ones can be punched and added whenever found to be necessary.

REPETITIVE PHRASEOLOGY

Edge-punched cards can handle

repetitive phraseology easily. With other input media, this is usually difficult or impossible.

Assume, for example, that the operator has been asked to produce a notice of motion. She has been given a dictation sheet with code numbers that refer to punched cards. She opens a looseleaf ring book, entitled "Notice of Motion," and begins.

The first instruction reads "A." There is an edge-punched card marked *A*, which is inserted into the machine, and which types the phrase, "Please take notice that upon"

The next instruction reads, "B1 Harold Hapless." The *B1* card is used, and types the phrase, "the annexed affidavit of" The operator now manually adds the name of the affiant.

Because the position of the card in the reader, as well as the label on it, shows her that the card contains more language, she starts the reader again. The machine types, "duly sworn to on" The operator now knows she must add the date of execution, which she obtains from the affidavit that is to accompany the notice.

The next instruction reads, "B1 Roger Rascale," and here is where the repetition comes in. The operator now *reinserts* the *B1* card and reuses it for this second entry.

The reuse of an edge-punched card to make another entry of its material would probably go unno-

ticed. Yet, this often needed technique is extremely difficult or impossible to accomplish when using a roll of tape. Once a phrase on tape has been read, to repeat it requires that the tape be reversed, and that the beginning of the phrase be located. Many readers simply will not operate in reverse. Even if one does, the beginning of the phrase must have been coded or marked so that the machine can find it automatically or the operator can see it visually.

Form Supplementation

Certain printed forms need to be supplemented by the addition of some materials that are chosen from among a limited group of phrases. For example, the note of issue form may require a recitation of the nature of the cause of action, the notice of examination before trial may have to set forth a brief description of who is to be examined, or the statement of readiness may have to indicate the status of preparatory steps.

The folder in which a particular printed form is kept may also store a companion cardholder page in which are inserted punched cards, each of which will type one or more of the necessary supplementary phrases. Because these cards are used to supplement a particular form, they are stored with that form. No time is lost obtaining the needed supplementary materials from a reel of tape stored elsewhere.

Assume, for example that the operator takes a number of printed forms out of the form drawer—medical authorization form for the defendant's attorney, a note of issue form, a demand for jury, an affidavit of venue, a demand for examination before trial, and a statement of readiness. Using the caption card, the defendant's attorney's name and address card, and the card containing today's date, she is able to complete each one of them.

Perhaps lawyers never stop to realize how many office forms can be entirely or substantially completed using those three items. Affidavits of service, backs, and envelopes may also be completed by using those three cards.

The labeling on the punched card shows the operator the exact length of the phrase, and she sees exactly how it will lay out, and in that way she judges exactly at what point on the form she should start the card typing.

Drafting Paragraphs of an Agreement

Assume that the operator is asked to type an agreement that will later be subjected to extensive negotiations. Initially, such a document will have to be dictated conventionally and typed manually, since it contains no stereotyped clauses that have been prepunched. However, although no prepunched cards are available, the automatic typewriter can still be of great value in re-

vising the agreement during negotiation and, ultimately, in typing it into final form.

Any automatic typewriter can produce a recording of the initial typing job onto tape, either magnetic or punched paper. The operator then works with the tape to produce each revised draft of the document.

In practice, however, most documents are revised on a paragraph-by-paragraph basis. Some paragraphs will require no modification, while others may go through many redrafts until final language is agreed upon. It wastes time to revise on a page-by-page basis, particularly when pages are 14 inches long. Revision by paragraphs is much faster and enables the operator to get the revised material back into the hands of counsel with almost no lost time.

REVISION BY PARAGRAPHS

Revision by paragraphs is greatly facilitated by punching the paragraphs of the initial draft into separate punched cards. If the paragraphs of the agreement are numbered, the punched cards can be correspondingly numbered in pencil, and labeling them will not be necessary. If unnumbered, the first few words may be written to identify the cards' contents.

As the attorneys negotiate a particular paragraph of the agreement, the secretary may note any changes wanted on a draft copy of the para-

graph, or in shorthand on the card itself, if she prefers. While the attorneys discuss the next paragraph, the secretary inserts the punched card of the paragraph to be revised into the machine's reader and uses as much of it as she wishes to re-type and repunch the paragraph as modified.

The changes wanted may be so extensive that she may elect to re-type the entire paragraph manually. In either event, she ends up with the new paragraph, not only typed, but punched into cards as well.

When the last paragraph of the agreement has been negotiated to conclusion, the operator has a set of cards, paragraph for paragraph, perfect in every detail, that can be run onto the final paper without error, at very high speed.

Cards as a Bookkeeper's Aid

PAYMENT OF BILLS

The office bookkeeper has sent in a looseleaf ring book marked, "Bills to be paid." The cardholder pages in the book contain edge-punched cards labeled with names and addresses, and some of these pockets also contain checks, fully drawn and ready for mailing.

The operator understands, without further instruction, that the bookkeeper wants envelopes prepared for the addressees who are to receive the checks.

This particular approach was developed by the bookkeeper herself.

Shortly after the machine arrived, she realized that she, too, could systematize some of her work for automatic typing. She took the initiative and did so.

PURCHASES

She also has set up punched cards in a looseleaf ring binder that she entitled "Purchases." The various suppliers from whom the firm routinely makes purchases are each assigned a cardholder page.

The first pocket of the page contains an edge-punched card that will type the vendor's name and address. The balance of the pockets contain punched cards, each ordering a specific item supplied.

PAYROLL

The bookkeeper also has developed a group of cards that facilitate her payroll recordkeeping. Since each employee's gross pay, deductions, and net pay are fixed, for the most part, she has punched those figures for each employee into a separate card.

At the end of the accounting quarter, she can have the operator type the payroll records by running these cards through the machine. Only the date of payment needs to be added, at the beginning of each line. If the volume of work warranted it, a payroll date tape could be punched to be used to feed in this information from an auxiliary reader.

Punched Cards as a Management Tool

By representing each office matter on an edge-punched card, various systems of office control may be developed. The cards can be sorted by different factors and then run through the automatic typewriter to yield lists of important information.

Assume that the managing attorney has arrived at the automatic typewriter with a filing tray. Seven hundred edge punched cards are in it, divided by separators into groups. He explains their function to the operator.

INFORMATION WRITTEN ON CARDS

Each active case in the office is represented by its own punched card. When read in the automatic typewriter, it types out the file number and name of the matter. However, each card has much more information than that written on it. Each card has had printing done on it to turn it into a small form.

The printed and written materials include:

- The office file number;
- The name of the case;
- The source of the case;
- Its nature;
- The name of the staff attorney responsible for its processing;

- The date the cause of action arose;
- The court in which it is pending;
- The calendar number;
- The defendant's attorney; and
- A pencilled indication of its present status.

PREPARATION OF CASE LISTS

Periodically, these cards are sorted into different categories and run through the automatic typewriter to accomplish different ends. At the end of each three-month period, the cards will be grouped according to the *attorney responsible*, and a list will be remitted to each such attorney in the firm.

At another time, the cards will be grouped by the *referring attorney* and run through to provide such attorneys with a list of their matters currently active.

During the summer months, the cards are grouped by *courts* and run, thus providing a calendar list that may be checked against court records. If the managing attorney wants the cases sorted and run by their *status*, the cards may be used for that purpose as well.

Sorting

At the present time, no equipment is available to mechanically sort the cards by their edge-punched holes. Mechanical sorting would re-

quire the use of an 80-column key-punched card—the type with vertical rectangular holes.

However, edge-punched cards can be sorted manually by a system that uses notches in a series of holes in the unpunched edges of the card. The cards are stacked on edge, and a long needle is passed through the appropriate hole and then raised. The unnotched cards are lifted out, while the notched ones stay behind.

This system is called "Keysort." Further information can be obtained from the source listed in the Appendix to this article.

PREPARING FOR AUTOMATION

Many firms have recognized the tremendous potential of automatic typewriters and are beginning to utilize them. Some of these offices simply take the plunge and buy one. Others may prefer to systematize their materials first.

There may be some advantage to buying first and then undertaking to program the materials for it. The very existence of the machine in the office stimulates interest in its capacities and encourages personnel to develop programs to use them.

On the other hand, during the months when programs are evolving, the machine will receive limited use. The equipment represents an investment of money that no proprietor likes to see idle. Unless the work of the office already exists

in a well organized, structured form beforehand, there will be a period of anxiety as to whether the approach will ever really work.

Programming Materials in Advance

However, there is a way to program your materials in advance—to see how the system is adaptable to your practice—before purchasing any automatic typewriting equipment. This method was described in detail in Sternin, *How to Automate Law-Office Typing—A Step-by-Step Approach*, THE PRACTICAL LAWYER, May 1968, p. 69.

This approach entails typing office materials onto blank three- by seven-inch cards, which are then stored as if they were edge-punched cards. Office personnel develop systems of cards, which they then use, modify, and improve in daily practice.

The office staff will have many of the advantages of a systems approach. The only difference will be that their "dictation" is typed manually.

When a large number of these card systems are perfected, an automatic typewriter is purchased. The office will then transfer the content of the existing cards onto edge-punched cards. The unpunched cards may be retained to be used as the set from which dictation is done.

The advantages of this "dry run first" approach are considerable. There is no initial large cash outlay for a machine whose applicability to your practice may still be in doubt. More important, if your staff does develop workable systems of the unpunched cards, conversion to automatic typing is quick and assured success when the automatic typewriter arrives.

APPENDIX

SOURCES FOR FURTHER INQUIRY

Information regarding storage materials, such as cardholder pages, may be obtained from Circle West Company, 47 Circle Drive, Elmont, N.Y. 11003.

For literature and pictures of automatic typewriters, write to Friden Division of the Singer Company, 20 North Union Street, Rochester, N.Y. 14607.

Descriptive material relating to "Keysort" may be obtained from Automated Business Systems, McBee Division, Litton Industries, 235 East 42nd Street, N.Y. 10017.